

Patent Abstracts of Japan

PUBLICATION NUMBER : 58155203
PUBLICATION DATE : 14-09-83

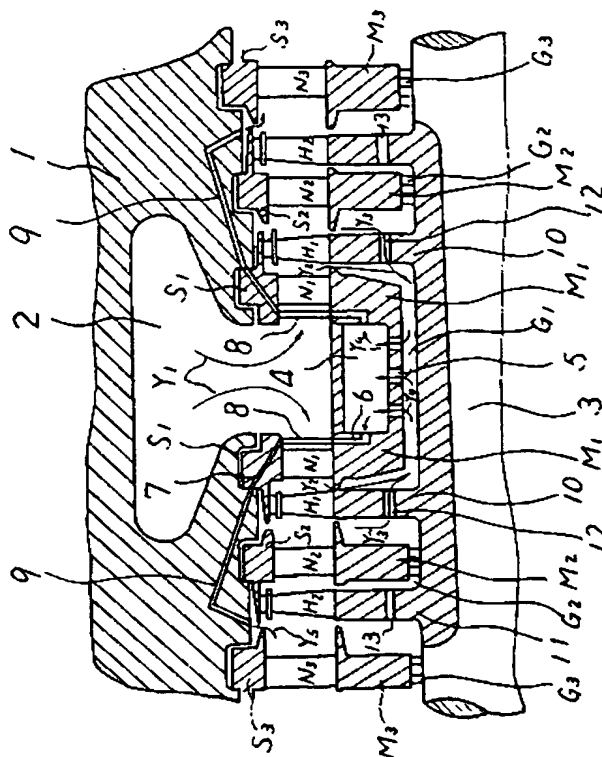
APPLICATION DATE : 12-03-82
APPLICATION NUMBER : 57038170

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INT.CL. : F01D 5/08 F01D 9/02

TITLE : STEAM TURBINE



ABSTRACT : PURPOSE: To suppress the thermal fatigue of the rotor of a steam turbine employing a reheating cycle, by causing the mixture of leaking steam at the outlet ports of the inner rings of first-stage nozzle sections and that at the outlet ports of the butts of first-stage blades to flow as cooling steam on the surface of the rotor.

CONSTITUTION: Reheated steam of high temperature is conducted from an inlet opening 2 so that the steam is divided into two directions Y_1 . The divided portions of the steam flow through first-stage nozzles N_1 so that the steam portions are accelerated. The steam portions then flow on the blades H_1 of a rotor 3 to perform work. After that, the steam portions flow to downstream nozzles N_2 , N_3 and blades H_2 . In that case, the surface of the rotor 3 is cooled by reheated steam of lower temperature than reheated steam portions $Y_2 \sim Y_5$. Since the temperature of the steam Y_3 which has performed work while flowing on the first-stage blades H_1 drops much, the mixture of leaking steam Y_2 from the first-stage nozzles N_1 and that Y_3 the first-stage blades H_1 has a slightly lower temperature than the reheated steam Y_1 at the inlet opening 2 of a medium-pressure turbine. For that reason, the surface of the rotor 3 is cooled by the mixture conducted through a gap G_1 .

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